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invalid or if the caller does not respond to a system prompt, the serving switch will typically ask the caller to hold the line for a live operator, and transfers the call to an Operator Workstation. When the operator answers, the OWS screen shows call information, including card number (if already entered), destination number (if already entered), trunk identification, and a failure code.

Traveling Class Mark TCM. A code that accompanies a long distance call. When Automatic Route Selection (ARS) or Uniform Numbering/Automatic Alternate Routing (UN/AAR) selects a tie trunk to a distant tandem PBX, the traveling class mark (TCM) is sent over the tie trunk. It is then used by the distant system to determine the best available long distance line consistent with the user's calling privileges. The TCM indicates the restriction level to be used based on the phone, trunk or attendant originating the call or the authorization code, if dialed.

Tray See Rack.

TRC Transit Routing Control Table.

TRCO Trouble Reporting Central Office.

Treatment A billing and collections term. The specific steps of the collection process to which an account is subject. The treatment level may begin with a "courtesy" call which may go something like "Mr. Newton, this is Mrs. Horak with your friendly telephone company. We've noticed that your account is past due. In fact, you have not paid your telephone bill for three months. When might we expect payment?" At this point, Mrs. Horak verifies employment, which is a standard step. Now the conversation takes a turn for the worse. "Mr. Newton, do I understand correctly that you no longer work for Flatiron Publishing, and that you expect me to believe that you now work for Harry Newton Enterprises? Really Mr. Newton! I must request immediate payment by cash, cashier's check or money order! Failure to comply with this demand by the end of the business day will result in the disconnection of your service. Oh, did I mention that we will require a security deposit of \$5,000? That, too, will have to be paid by the end of the business day. Yes, Mr. Newton, I am fully aware that it is 4:59PM. Mr. Newton, Mr. Newton." (Aside: "Ray, those guys in the switchroom are really good! They cut Harry's service off at exactly 5:00. That'll teach him to pay his bills on time!") Note: This scenario actually is very inaccurate- the guys in the switchroom aren't nearly that good. Actually, treatment levels are highly sensitive to the size of the bill, the age of the receivable, the history of the account, and other factors. Treatment levels may begin with a courtesy call, progress through several calls of a firmer tone, a formal letter or two of successively firmer tone, suspension of service, and disconnection. Restoral of service and reconnection entail service fees and generally involve a security deposit. If you don't pay your final bill quickly, you'll be dealing with a collection agency. Pay your telephone bill on time.

Treatment Level Treatment level is a term used in some telephone companies' billing and collections processes. The phrase is used to help a telephone company identify where a particular customer is in the collections/overdue billing process and proper protocol in treating the customer. See Treatment.

Treaty of Breda See Nutmeg.

Tree 1. A network topology shaped like a branching tree. (What else?) It is characterized by the existence of only one route between any two network nodes. Most CATV distribution networks are tree networks.

2. In MS-DOS, a tree describes the organization of directories, subdirectories, and files on a disk.

Tree Hugger IBM-speak for an employee who resists a move or any other change.

Tree Mailbox A special function mailbox that provides the caller with a menu and allows selections from the menu using single digit commands.

Tree Network A network configuration in which there is only one path between any two nodes.

Tree Search In a tree structure, a search in which it is possible to decide, at each step, which part of the tree may be rejected without further search.

Tree Stand Aerial Cross Box. A cross box on a pole. Used where vandals live or when there's a narrow easement.

Tree Structure Describes the organization of directories, subdirectories, and files on a disk.

Tree Topology A network cabling architecture in which nodes are connected by cables to a central, or trunk, cable with a central retransmission capability.

Treeware Slang for documentation or other printed material.

Trellis Code See Trellis Coding.

Trellis Coding A method of forward error correction used in certain high-speed

modems where each signal element is assigned a coded binary value representing that element's phase and amplitude. It allows the receiving modem to determine, based on the value of the preceding signal, whether or not a given signal element is received in error. See V.32 and V.32 bis. In QPAM, trellis coding adds extra bits (the trellis code) to data transmitted over a modem. The extra bits are fed to a mathematical algorithm at the receiver that lowers the number of possible choices in a QPAM eye-pattern. Helps modems do "on the fly" error detection and correction. See QPAM.

Trellis Coding Modulation TCM. A modem modulation technique in which sophisticated mathematics are used to predict the best fit between the incoming signal and a large set of possible combinations of amplitude and phase changes. TCM provides for transmission speeds of 14,400 bps and above on single voice grade phone lines. See V.32 and V.32 bis.

Tremendously High Frequency Frequencies from 300 GHz to 3000 GHz.

TREX Transmission Expert.

TRFR TRansFeR.

TRG Technical Review Group.

TRI-CWDM On August 30, 1995, MCI Communications announced the deployment of a technology that will enable it to increase the capacity of its network by 50 percent without any additional fiber optic lines. The technology, known as Tri-Color Wave Division Multiplexing (Tri-CWDM), allows existing fiber to accommodate three light signals instead of two, by routing them at different light wavelengths, through the combined use of narrow and wide band wave division multiplexing. With this method, lightwaves are transmitted at 1557 nanometers (nm) and 1553 nm to a wide band WDM device, where a 1310 nm signal is added. Once combined, the three signals are routed through a single fiber to the next site where they are separated and sent to the receivers. Transmitting three signals in each direction allows for three different transmit pairs on just two fibers, effectively increasing the total network capacity from 5 gigabits to 7.5 gigabits. MCI officials say the technology will be particularly valuable in major metropolitan areas, where the company is enjoying outstanding growth in voice and data traffic. Essentially TRI-CWDM is now obsolete, replaced by Dense Wave Division Multiplexing. See DWDM.

Tri-Mode Tri-Mode describes a cell phone that operates in North America on both digital bands — 800 Mhz and 1900 Mhz — along with analog AMPS in the 800 Mhz band. The reason you'd want such a phone is simple: Digital service is often cheaper better in areas you can get it. But you can't get it everywhere. If you travel you need a cell phone you can use everywhere. Thus the idea of carrying a three band cell phone and subscribing to a service that gets you access to all three. Tri-mode can also apply to other parts of the world but I am not familiar with the different band/mode interactions. The U.S. doesn't have a specific wireless carrier that provides all three modes but Canada does. Commonly, wireless carriers have agreements that allow handsets to receive a competitor's service when roaming or if the primary service contains areas of poor service which would otherwise cause dropped calls. So a carrier may provide only 1900 Mhz PCS but when necessary allow the phone to operate in 800 Mhz AMPS, offered by another carrier, so that calls are not dropped. This concept applies to the Dual Band phones, as well. See Dual Band.

Triangulation A method of locating the source of a radio signal through the use of three receivers, each of which focuses on the direction of maximum signal strength. Through the use of three receivers, it easily is possible to plot the general location of the transmitter, even though radio signals bounce off and are absorbed by physical obstructions such as buildings, trees and cars. This process, also known as Angle of Arrival, now can be accomplished by two, or even a single, receivers employing much more sophisticated, smart-antenna technology.

Triaxial Cable A cable construction having three coincident axes, such as a conductor, first shield and second shield all insulated from one another.

Tribit Transmission A transmission technique used by some modems in which three bits are transmitted simultaneously.

Tributary The lower rate signal input to a multiplexer for combination (multiplexing) with other low rate signals to form an aggregate higher rate signal.

Tributary Circuit A circuit connecting an individual phone to a switching center.

Tributary Office A local office, located outside the exchange in which a toll center is located, that has a different rate center from its toll center.

Tributary PBX An exchange within the main PBX configuration but with its own listed number. The only difference between a satellite and a tributary PBX is that the tributary PBX has a direct incoming connection from the public network. See Satellite PBX.